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ABSTRACT

The paper describes an approach in which games were planned to provide instruction for three severely handicapped children (5-6 years old) with few leisure, social, or academic skills and many aberrant behaviors. The first of two games involved a language program to teach verbal interactions, picture identification, and picture matching. The second game involved a math program to teach counting skills determined by a pretest. After 4 months of instruction with the counting games and 6 on the card games, the Ss had mastered two of three counting skills and the first phase of the language card game. Generalization of some of the skills had also occurred. (CL)

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Game Plans for Victors:
New Skills for Severely Handicapped Children

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Abstract

A movement for the education of severely handicapped individuals has grown that is dedicated to the ideal of educability and the goal of community placement for all persons. The special educator's challenges in meeting these objectives are to identify effective and motivational instructional strategies and curricular content that prepare students for least restrictive environments. Skills from this curriculum must be prioritized to address those most critical to public school placement and eventual community living, because of the slower rate of learning of severely handicapped children. In teaching these skills, games could provide on-going motivation as well as concurrent instruction in other important social and leisure skills. When game instruction has incorporated the methodology of applied behavior analysis, severely and profoundly retarded students have acquired diverse skills. This paper presents two game formats which were used to teach math and language skills to children who possessed few leisure, social, or academic skills and who exhibited many aberrant behaviors.

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Game Plans for Victors:
New Skills for Severely Handicapped Children

In the late eighteenth century in France, Jean Itard shaped the future of special education by assuming responsibility for the education of a boy named Victor, who had been living alone in the forest and who was inarticulate, socially isolate, and replete with aberrant behaviors. In the years that followed the discovery of Victor, Itard taught him intensively. Itard's firm conviction that all persons could learn with adequate stimulation conflicted with the popular "hereditary" or "naturalist" view of his day (Kott, 1971).

If Victor were diagnosed in this century, he would probably be classified as severely handicapped (e.g., severely retarded or severely emotionally disturbed). Two hundred years after the work of Itard, debate can be found on the educability of such children (Hallahan & Kaufman, 1982; Noonan, Brown, Mulligan, & Rettig, 1982). However, a movement for the education of severely handicapped individuals has grown that is dedicated to the ideal of educability and the ultimate goal of community placements for all persons (Brown, Branston-McClean, Baumgart, Vincent, Falvey, & Schroeder, 1979; Brown, Nietupski, & Hamre-Nietupski, 1976). The special educator's challenges in meeting these objectives are to identify effective and

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motivational instructional strategies and curricular content that prepare students for least restrictive environments.

For example, a preparatory curriculum for a 5-year-old severely emotionally disturbed child would be one which reflected the skills taught in a public school kindergarten or first grade classroom (Vincent, Salisbury, Walter, Brown, Gruenwald, & Powers, 1980). However, skills from this curriculum must be prioritized to address those most critical to public school placement and eventual community living, because of the slower rate of learning of severely handicapped children. These skills must, then, be task analyzed into smaller instructional steps for shaping their acquisition.

In teaching these skills, games could provide on-going motivation as well as concurrent instruction in other important social and leisure skills. When game instruction has incorporated the methodology of applied behavior analysis, severely and profoundly retarded students have acquired skills such as verbal labeling (Bates & Renzaglia, 1982), picture matching (Nietupski & Svoboda, 1982), and motor behaviors for operating video games (Sedlak, Doyle, & Schloss, 1982). Games could be especially useful for severely emotionally disturbed children because they provide an opportunity for instruction in social interaction. The following are two examples of ways games were planned to provide instruction for children who had few leisure, social, or academic skills and many severely aberrant behaviors.

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Game Plans

The three students who received this instruction were enrolled in a private school for severely emotionally disturbed students. The students' primary handicaps were severe emotional disturbance including characteristics of autism (e.g., gaze aversion, self-stimulation) and brain damage. Their chronological ages were 5-to-6-years of age. The aberrant behaviors the children exhibited included noncompliance, tantrums, self-stimulating hand play, gaze aversion, and inappropriate verbalizations. The students had been taught to sit through 15 to 20 minute lessons by means of an on-going token economy in which pennies were awarded for sitting, eyes on task, and correct responses. Pennies were exchanged for back-up reinforcers. The classroom teacher introduced a higher ratio of exchange and less intrusive back-up reinforcer over the course of the year to "wean" the students from the token economy system (i.e., from edibles to toy play to socials such as tickles or hugs). Also, each student had a prescribed management program for his or her aberrant behavior (e.g., response cost, social reprimand) that was developed and updated by an interdisciplinary staff. These programs were in effect during the entire school day, including the game time instruction described herein.

Two games were developed for these students. The first plan (see Table 1) involved a language program to teach

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Insert Table 1 about here.

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verbal interactions, picture identification, and picture matching through a modified version of the card game, "Fish." Two students engaged in the card game training program during 3 days each week. In addition, games were played once or twice a week during other programs (e.g., math, language) to assess and teach generalization of the skills across persons and times. Students learned the card game in three phases of increasing difficulty (see Table 2). Initially, students participated

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Insert Table 2 about here.

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in an abbreviated game in which the cards were stacked to force an immediate win after a single verbal interaction between the players. Subsequently, the length of the game was extended and the cards were stacked to require two verbal interactions between the players. Ultimately, an unstacked deck of 10 cards was dealt, resulting in varied amounts of verbal interaction for each game. Prior to playing the game, students were presented with a selection of reinforcers and reminded of their individual criterion for token exchange. A system of response prompts was employed to elicit response. The trainer, first, verbally prompted the child to perform the card playing task. If the child did not respond within 5 seconds or did not perform correctly, the trainer modeled the correct response. The child was, then, requested to perform the task again. If the child did not respond within

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5 seconds or did not perform correctly, the trainer physically guided the correct response. Each correctly executed assisted response was reinforced by receipt of one token. Token exchanges were conducted at the end of each game.

The second plan (see Table 3) involved a math program

Insert Table 3 about here.

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to teach counting skills that were determined from an assessment of each student's performance on the Resnick, Wang, and Kaplan (1973) math sequence. During two weekly individual sessions, students received individual instruction on counting items ordered in a straight line, counting unordered items, and matching numerals and sets. During daily group sessions, students practiced these skills through games requiring the movement of markers on a gameboard. Prior to each session, students were presented with a selection of reinforcers and reminded of their individual criterion for token exchange. Here again, a system of response prompts was employed to elicit response. The trainer, first, verbally prompted the child to perform the item counting and game playing tasks. If the child did not respond within 5 seconds or did not perform correctly, the trainer modeled the correct response.

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The child, then, was requested to perform the task again. If the child did not respond within 5 seconds or did not perform correctly, the trainer physically guided the correct response. Each correctly executed assisted response was reinforced by receipt of one token. Token exchanges were conducted at the end of each game.

Program Evaluation

At the end of the school year, after 4 months of instruction with the counting games and 6 months of instruction on the card game, the students had mastered two of the three counting skills and the first phase of the language card game. The students demonstrated generalization of the counting skills in many of the activities listed in Table 4. The students also generalized the first phase of the language card game to other

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Insert Table 4 about here.

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matching tasks (colors, letters) and to commercial "Fish" cards. Although progress was gradual, both the teachers and the students' parents were pleased with the students' acquisition of age appropriate skills.

Conclusions

After years of effort, Itard resigned from teaching his pupil Victor because the boy's progress in becoming a "normal" individual was disappointing. However, Itard had made a great contribution to Victor and to the future of special education.

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When progress is slow, the temptation exists to forfeit a program, if not a student. However, dropping a difficult program to review a simpler one may not improve performance, especially when the content is critical to placement in less restrictive environments. When victory in the form of progress is realized, the challenge becomes to increase the rate of learning, so our contemporary "Victors" will acquire the critical skills for a normalized life.

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Table 1. Program to teach language/card playing skills

TABLE 1

Language Card Game Program

I. Weekly Schedule

Monday, Wednesday, Friday 1:00-1:30
Plus generalization games scheduled 1-2 times a week

II. Materials

-Teacher made cards from poster board with 5 sets of pairs of animal stickers including: monkeys, rabbits, bears, squirrels, and skunks.

-Teacher made cards with generalization items (e.g., colors, numbers)

-Purchased standard Fish cards for generalization of game

III. Objectives

1. Given a deck stacked for an immediate win without drawing from the deck, the student will play the game performing at least 85% of the steps of the task analysis correctly for 2 consecutive probes.

2. Given a deck stacked to require drawing from the deck, the student will play the game performing 85% of the steps of the task analysis correctly for 2 consecutive probes.

3. Given an unstacked deck of 10 cards, the student will play the game until someone wins performing all steps correctly for 2 consecutive probes.

IV. Probe Procedure

Before the first probe (baseline) only, two teachers model playing the game. Test each child individually by giving him the cards and saying, "Let's play the card game." Allow the child 5 seconds to initiate the game and to perform each subsequent step as denoted on the task analysis (See Table 2). Score each step of the task analysis as correct or incorrect. Probe prior to teaching biweekly.

V. Teaching Procedure

1. Stack the deck for the instructional phase (e.g., immediate match for Phase 1). Two students play the game together.

2. Display the current selection of reinforcers (e.g., toy animals like pictures on cards) and state current economy "price". Remind students of criteria to earn tokens (i.e., playing the game correctly, eyes on task, and good sitting in the absence of aberrant behaviors.)

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3. The teacher presents the cards and says "Let's play the card game. (Name), you may go first." The student is given 5 seconds to initiate the first step of the game (i.e., ask for a card to match his animal card). After 5 seconds, if the student does not respond, the teacher models the correct response. If the student responds correctly, the teacher praises him.

4. After 5 seconds, if the student does not respond, the teacher physically guides the student through the correct response.

5. The next student is given 5 seconds to respond to the request before the teacher prompts him and so on, for all steps of the game.

6. At the end of the game, the instructor prompts one student to congratulate the winner (shake hands). The game is repeated four times with the teacher stacking the deck to alternate winners in Phases I and II.

7. Tokens are awarded during the game and exchanged for the back up at the student's current schedule of exchange (exchange can be made only at end of a game).

8. Play 4 games.

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Table 2. Task analysis showing three phases of card game used in language card/game program.

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TABLE 2

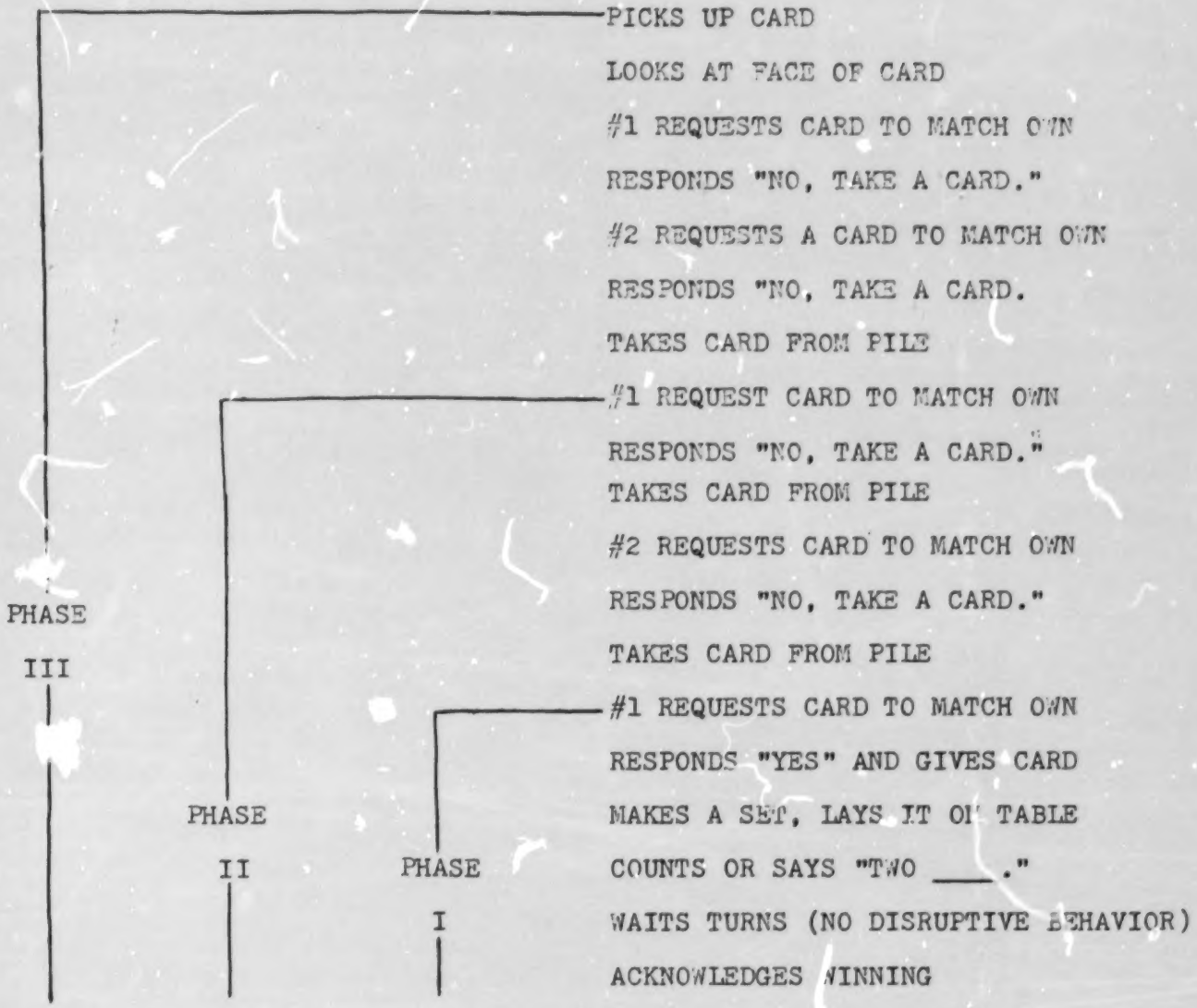
PICKS UP CARD
LOOKS AT FACE OF CARD
#1 REQUESTS CARD TO MATCH OWN
RESPONDS "NO, TAKE A CARD."
#2 REQUESTS A CARD TO MATCH OWN
RESPONDS "NO, TAKE A CARD.
TAKES CARD FROM PILE
#1 REQUEST CARD TO MATCH OWN
RESPONDS "NO, TAKE A CARD."
TAKES CARD FROM PILE
#2 REQUESTS CARD TO MATCH OWN
RESPONDS "NO, TAKE A CARD."
TAKES CARD FROM PILE
#1 REQUESTS CARD TO MATCH OWN
RESPONDS "YES" AND GIVES CARD
MAKES A SET, LAYS IT ON TABLE
COUNTS OR SAYS "TWO ___."
WAITS TURNS (NO DISRUPTIVE BEHAVIOR)
ACKNOWLEDGES WINNING
PHASE III
PHASE II
PHASE I

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Table 3. Program to teach counting skills.

TABLE 3

Counting Program

I. Weekly Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
1:1 Time:	Objects and Pictures	Probe	Objects and Pictures	Probe	None

Group Time: One Game Each Day

II. Materials

Cards with pictures ordered and unordered, basket of objects changed frequently (e.g., pins, felt, cowboys, cars) and games.

III. Objectives

1: Count Items Ordered in Straight Line

Given pictures or objects that are in a line, the student will count correctly from left to right for 8/10 trials for two consecutive probes.

2: Count Items Unordered

Given pictures or objects that are not aligned, the student will count them correctly for 8/10 trials for two consecutive probes.

3: Math Objects and Numbers

Given a set of objects or pictures, and an array of 3 numbers, the student will match the items to the number for 8/10 trials for two consecutive probes.

IV. Probe Procedure (bi-weekly)

Give 10 trials of pictures and objects as described in the objectives. During each trial, present the items to be counted, ask the student to count (or match) them. Wait 5 seconds for a response. Score the response as correct or incorrect. Graph number of trials correct.

V. Teaching Procedure

1. Set out game and materials scheduled for the day.

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2. Display current selection of reinforcers and state current token economy "price." Remind students of criteria to earn tokens (audible counting, correct counting, eyes on task, and good setting in the absence of aberrant behaviors).

3. Designate whose turn it is. This person leads the counting. All other students must count with the leader. The teacher counts also. The person whose turn it is manipulates the items counted and moves on the gameboard. The teacher uses verbal, modeled, then physical prompting as necessary to facilitate the game playing action.

4. All subjects who met the stated criteria receive a token.

5. Steps 3 and 4 are repeated with students taking turns until the end of the game.

6. Tokens are exchanged at the end of the game for time to use back-up reinforcers (e.g., small toys, felt tip pens).

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Table 4. Generalization activities for counting for 5-to-6-year-olds.

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TABLE 4

Generalization activities for counting for 5-to 6-year-olds

School

1. Count classmates and materials to set up chairs, snacks, art, etc.
2. Count classmates for attendance record.
3. Count number of days left in the week on calendar.
4. Count out beats on musical instruments.
5. Count tokens earned in token economy.
6. Count stickers earned for correct responding.
7. Sing songs with rote and finger counts.
8. Count as a play activity during transition times (e.g., How many shoes?).

Home

1. Count out dishes, silverware, napkins to set the table.
2. Count out beats with musical instruments (e.g., sticks, piano, or drum).
3. Count as a play activity (e.g., How many blocks?).
4. Count pictures in books.
5. Select and count a set of crayons for coloring.
6. Count with the television program "Sesame Street".
7. Count out pennies for purchasing small items.
8. Count landmarks while walking (e.g., number of stop lights, blocks, stop signs).